3. (Currently amended) The molecular detection apparatus of claim 1, wherein ~~the~~ said means for detecting the diffusion of the molecule proximate the sensing area further includes a means for detecting variation of molecular concentration as a result of diffusion and interaction proximate the sensing area.

4. (Cancelled) The molecular detection apparatus of claim 3, wherein the means for detecting diffusion of the molecule comprises a first compartment.

5. (Previously amended) The molecular detection apparatus of claim 1, wherein the first compartment contains a matrix material.

6. (Cancelled) The molecular detection apparatus of claim 5, furthering comprising a second compartment adjacent the first compartment and a boundary area disposed between the first and second compartments.

7. (Cancelled) The molecular detection apparatus of claim 6, wherein the first compartment also contains a ligand molecule.

8. (Cancelled) The molecular detection apparatus of claim 1, wherein the ligand molecule is smaller than the receptor molecule and wherein the boundary area includes a membrane operative to allow ligand molecules to pass therethrough and to prevent passage of receptor molecules.

9. (Currently amended) The molecular detection apparatus of claim 81, wherein ~~the~~ said ligand ~~molecule~~ is a drug molecule having a molecular weight less than 1000 Daltons.

10. (Original) The molecular detection apparatus of claim 9, wherein the receptor molecule has a molecular weight greater than 5 kiloDaltons.

11. (Original) The molecular detection apparatus of claim 10, wherein the receptor molecule includes a protein molecule.

12. (Original) The molecular detection apparatus of claim 11, wherein the second compartment contains a buffer solution.

13. (Original) The molecular detection apparatus of claim 12, wherein the means for measuring molecular concentration of the molecule further comprises an optical detector.

14. (Original) The molecular detection apparatus of claim 13, wherein the optical detector includes a light source and a light detector.

15. (Original) The molecular detection apparatus of claim 14, wherein the light source includes a UV light source, the light detector includes a charge-coupled device detector, and the optical detector is operative to measure the light absorbed by the second compartment.

16. (Original) The molecular detection apparatus of claim 2, wherein the means for measuring the variation of molecular concentration comprises a refractive index detector and a diffraction device including three laterally spaced openings in a substrate.

17. (Original) The molecular detection apparatus of claim 16, wherein the means for measuring the molecular concentration further comprises detecting the change in the far field diffraction pattern generated by the three laterally spaced openings.

18. (Original) The molecular detection apparatus of claim 17, wherein the three laterally spaced openings includes a central opening containing a ligand and a receptor in solution.

19. (Original) The molecular detection apparatus of claim 18, further including means for detecting the change in the concentration of the ligand or the receptor contained in the central opening.

20. (Original) The molecular detection apparatus of claim 19, wherein the means for detecting the change in concentration of ligand and the receptor comprises a charge-coupled device camera.

21. (Currently amended) An apparatus for detecting interaction between a ligand and a receptor comprising:

a first compartment containing a matrix, a ligand and a receptor; and

a second compartment adjacent the first compartment, the second compartment containing a buffer solution; and

a light source and a detector arranged to measure the diffusion of the ligand into the second compartment; wherein the ligand is a drug molecule having a molecular weight less than 1000 Daltons and the receptor has a molecular weight greater than 5 kiloDaltons.

22. (Original) The apparatus of claim 21, wherein the matrix includes a polymer.

23. (Cancelled) The apparatus of claim 22, wherein the ligand is a drug molecule having a molecular weight less than 1000 Daltons and the receptor has a molecular weight greater than 5 kiloDaltons.

24. (Currently amended) The apparatus of claim ~~23~~21, wherein the light source and the detector determines the amount of light absorbed in the second compartment.

25. (Currently amended) An apparatus for measuring the interaction between a ligand and a receptor comprising:

a light source;

a detector; and

a substrate including at least three laterally spaced optical openings adapted to generate a diffraction pattern;

wherein the three-laterally spaced openings are positioned on the opposite surface of a substrate containing a Y-shaped element including a sensing area.

26. (Original) The apparatus of claim 25, wherein the three laterally spaced openings includes a central opening.

27. (Cancelled) The apparatus of claim 26, wherein the three-laterally spaced openings are positioned on the opposite surface of a substrate containing a Y-shaped element including a sensing area.

28. (Currently amended) The apparatus of claim ~~27~~25, wherein the sensing area of the Y-shaped element is optically aligned with the central opening.

29. (Currently amended) A substrate for use in a biological sensing system comprising three laterally spaced openings adapted to generate a diffraction pattern; wherein a first surface contains the laterally spaced openings and a surface opposite the first surface includes a Y-shaped element including a sensing area optically aligned with the central opening.

30. (Original) The substrate of claim 29, wherein the three laterally spaced openings are adapted to generate a Fraunhofer diffraction pattern.

31. (Cancelled) The substrate of claim 30, wherein a first surface contains the laterally spaced openings and a surface opposite the first surface includes a Y-shaped element including a sensing area optically aligned with the central opening.

32. (Currently amended) A method for analyzing biomolecular interactions comprising:

providing a ligand and a receptor either within or proximate to a slotted diffraction surface;

placing the ligand and the receptor in a Y-shaped element having a sensing area;

detecting the diffusion of biomolecules ~~proximate slotted diffraction surface~~.

33. (Original) The method of claim 32, wherein the diffraction surface comprises three laterally spaced slots.

34. (Currently amended) The method of claim ~~33~~32, further comprising monitoring the diffraction pattern generated by the diffraction surface.

35. (Currently amended) The method of claim ~~34~~32, further comprising providing a ligand and a receptor within or proximate ~~the~~ a central slot.

36. (Cancelled) The method of claim 35, wherein providing a ligand and a receptor proximate the central slot involves placing the ligand and the receptor in a Y-shaped element having a sensing area including the central slot.

37. (Currently amended) The method of claim ~~36~~32, further comprising filling the Y-shaped element with a solution.

38. (Original) The method of claim 37, further comprising electrokinetically pumping the ligand and the receptor across the sensing area.

39. (Currently amended) A method of analyzing biomolecular interactions comprising:

providing a ligand and a receptor either within or proximate to a slotted diffraction surface;

placing the ligand and the receptor in a Y-shaped element having a sensing area; and

monitoring the rate of diffusion of biomolecules from an upstream area towards a downstream area.

40. (Original) The method of claim 39, wherein the upstream area includes and upstream compartment containing a mixture of a ligand and a receptor separated from the downstream compartment by a membrane.

41. (Original) The method of claim 39, wherein the biomolecules are contained in a porous matrix.

42. (Original) The method of claim 39, wherein the downstream area includes means for measuring the absorbance of light in the downstream compartment.